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**Pedicini**

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(54) **FASTENER DRIVING APPARATUS**

(56) **References Cited**

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U.S. PATENT DOCUMENTS

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3,810,572 A \* 5/1974 Malkin ..... B25C 1/06  
227/131

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4,215,808 A 8/1980 Sollberger et al.  
4,717,060 A \* 1/1988 Cotta ..... B25C 1/08  
227/10

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4,932,479 A 6/1990 Pyatov  
5,720,423 A 2/1998 Kondo et al.  
5,794,325 A \* 8/1998 Fallandy ..... B25D 11/108  
173/203

6,938,811 B2 \* 9/2005 Ehmig ..... B25C 1/14  
227/10

6,997,367 B2 \* 2/2006 Hu ..... B25C 5/15  
173/202

7,063,247 B1 \* 6/2006 Lund ..... A01D 34/82  
123/286

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(Continued)

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FOREIGN PATENT DOCUMENTS

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See application file for complete search history.

(57) **ABSTRACT**

A fastener driving apparatus includes a drive mechanism, a drive piston disposed with in a cylinder and operatively coupled to the drive mechanism, and an anvil coupled to the drive piston. The apparatus also preferably comprises a biasing element for temporarily holding the drive piston at BDC of the piston cylinder. The drive mechanism is capable of selectively applying force on the drive piston to move the drive piston away from BDC of the piston cylinder. When the drive mechanism engages the drive piston to move the drive piston away from BDC, a vacuum is generated in the cylinder, which vacuum, after the drive mechanism disengages the drive piston, acts on the drive piston to cause the piston to move toward BDC and the anvil to drive a fastener. A sealed air chamber on the side of the piston opposite the vacuum may assist in generating force.

**20 Claims, 7 Drawing Sheets**

